

## ASSIGNMENT 1

Textbook Assignment. "Programs, Reports, and Records," "Gas Turbine Maintenance," and "Power Train and Propulsion Systems," chapters 1, 2, and 3.

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<hr/> <p>Learning Objective: Identify the procedures needed to properly maintain, monitor, and evaluate the programs, reports, and records required of gas turbine systems supervisors.</p> <hr/>	
1-1.	<p>The tag-out program must be enforced during which of the following conditions?</p> <ol style="list-style-type: none"><li>1. New construction</li><li>2. Normal operations</li><li>3. Maintenance</li><li>4. All of the above</li></ol>
1-2.	<p>A detailed description of the tag-out program procedures can be found in which of the following OPNAV instructions?</p> <ol style="list-style-type: none"><li>1. 3120.32</li><li>2. 5090.1</li><li>3. 5100.1</li><li>4. 9094.1</li></ol>
1-3.	<p>At a minimum, how often must tag-out audits be conducted?</p> <ol style="list-style-type: none"><li>1. Every week</li><li>2. Every 2 weeks</li><li>3. Every month</li><li>4. Every quarter</li></ol>
1-4.	<p>If the position of a danger-tagged valve is in question during a tag-out verification, what action, if any, should you take?</p> <ol style="list-style-type: none"><li>1. Attempt to operate the valve a small amount in the open direction</li><li>2. Attempt to operate the valve a small amount in the closed direction</li><li>3. Attempt to operate the valves on either side of the valve in question and monitor for pressure changes</li><li>4. None</li></ol>
1-5.	<p>As part of a tag-out audit, which of the following entries is NOT required to be written in the INDEX/AUDIT RECORD section of the tag-out log?</p> <ol style="list-style-type: none"><li>1. Date of the audit</li><li>2. Discrepancies noted</li><li>3. Number of tags checked</li><li>4. Signature of the person conducting the audit</li></ol>
1-6.	<p>A comprehensive look at the Navy's environmental pollution control program can be found in which of the following OPNAV instructions?</p> <ol style="list-style-type: none"><li>1. 3120.32</li><li>2. 5100.19</li><li>3. 5090.1</li><li>4. 9094.1</li></ol>
1-7.	<p>Which of the following individuals is authorized to inspect a space and to certify it safe for re-entry after a hazardous material spill where no toxic gases or vapors are present?</p> <ol style="list-style-type: none"><li>1. CDO</li><li>2. DCA</li><li>3. Fire marshal</li><li>4. Each of the above</li></ol>
1-8.	<p>A hazardous material spill that is considered detrimental to the environment requires which of the following reports?</p> <ol style="list-style-type: none"><li>1. OPREP-1</li><li>2. OPREP-2</li><li>3. OPREP-3</li><li>4. OPREP-4</li></ol>
1-9.	<p>Primary casualty control training concentrates on the control of what type of casualties?</p> <ol style="list-style-type: none"><li>1. Personnel</li><li>2. Battle inflicted</li><li>3. Single source</li><li>4. Multiple source</li></ol>
1-10.	<p>The EOSS serves all EXCEPT which of the following purposes?</p> <ol style="list-style-type: none"><li>1. To train unskilled operators</li><li>2. To eliminate the need for skilled operators</li><li>3. To schedule plant operations</li><li>4. To control plant operations</li></ol>

- 1-11. During a scheduled ROH, an EOSS verification check will be scheduled approximately how many weeks prior to the end of the availability?
  1. 6
  2. 8
  3. 3
  4. 4
- 1-12. The rough copies of the EOSS will be used for approximately how many weeks before the new laminated copies are received?
  1. 6
  2. 8
  3. 10
  4. 12
- 1-13. An EOSS feedback report should be submitted for all of the following reasons EXCEPT which one?
  1. To report an EOSS conflict with another technical reference
  2. To order new book holders
  3. To correct document errors
  4. To order new twisties
- 1-14. A final pen and ink change to the EOSS resulting from an urgent feedback is authorized by what individual?
  1. The type commander
  2. The group commander
  3. The commanding officer
  4. The engineer officer
- 1-15. A routine EOSS feedback report is submitted on which of the following OPNAV forms?
  1. 4790/4B
  2. 4790/7B
  3. 9094/1A
  4. 9094/1D
- 1-16. The 3-M COORDINATOR block on an EOSS feedback report must be signed by what individual?
  1. The MPA
  2. The chief engineer
  3. The 3-M coordinator
  4. The EOSS coordinator
- 1-17. All full-power trials will be conducted with what minimum liquid load?
  1. 65%
  2. 75%
  3. 85%
  4. 95%
- 1-18. A full-power trial must be conducted at what minimum periodicity?
  1. Every quarter
  2. Every 6 months
  3. Every year
  4. Every 18 months
- 1-19. The OPNAV form 9094/1A is used to provide what type of information?
  1. An overall grade for the exercise
  2. A detailed listing of plant conditions
  3. A general listing of plant conditions
  4. A listing of all safety devices and their set points
- 1-20. In the MGTEL which of the following entries is/are authorized to be written in pencil?
  1. NINC only
  2. NIS only
  3. NINC and NIS
  4. INC
- 1-21. The acronym BIRMIS refers to which of the following descriptions?
  1. Boiler information and replacement management inspection system
  2. Boiler inspection and replacement management information system
  3. Boiler inspection and repair management information system
  4. Boiler information and repair management inspection system
- 1-22. A steaming WHB must be sampled within what maximum number of minutes prior to securing?
  1. 90 minutes
  2. 60 minutes
  3. 45 minutes
  4. 30 minutes
- 1-23. A WHB placed in a dry lay-up can remain in that status for what maximum amount of time?
  1. 10 days
  2. 30 days
  3. 60 days
  4. Indefinite

- 1-24. If a salinity indicator is malfunctioning, the water it monitors must be tested at what minimum periodicity?
1. Every 2 hours
  2. Every 4 hours
  3. Every 8 hours
  4. Every 12 hours
- 1-25. If a deaerated feed tank is installed, a dissolved oxygen test must be performed at what minimum periodicity?
1. Every 24 hours
  2. Every 12 hours
  3. Every 8 hours
  4. Every 4 hours
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- Learning Objective: Describe the maintenance procedures needed to help maintain an MGTE in peak operating condition.
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- 1-26. Domestic object damage is defined as damage originating from which of the following sources?
1. The inlet plenum
  2. The uptake spaces
  3. The base enclosure
  4. The inside of the engine
- 1-27. If the FOD screen is clogged by soft items, which of the following conditions may result?
1. An increase in power
  2. Low duct pressure
  3. High duct pressure
  4. Elevated turbine inlet temperatures
- 1-28. When working in and around intake areas, you should take all EXCEPT which of the following safety precautions?
1. Ensure the blow-in doors are clean
  2. Inspect the intakes for cleanliness
  3. Account for all tools and equipment
  4. Remove all loose objects from your person
- 1-29. You can find the inspection requirements and procedures for borescope inspections in which of the following sources?
1. The MGTESR
  2. The MRC
  3. The propulsion plant manual
  4. The engineering log

- 1-30. When conducting a borescope inspection, you must be aware of all EXCEPT which of the following factors?
1. The internal reference points
  2. The inspection areas and ports
  3. The engineer officer's experience
  4. The limitations of your equipment
- 1-31. It is a good engineering practice for you to review the machinery history of an engine before a borescope inspection for all EXCEPT which of the following reasons?
1. To know past inconsistencies
  2. To know the components that are damaged
  3. To know the parts that have been modified
  4. To know the parts that have been changed
- 1-32. What total number of borescope inspection ports are located in the LM2500 compressor?
1. 5
  2. 10
  3. 15
  4. 20
- 1-33. After removing the  $P_{ts,4}$  pressure probes, what area(s) can you inspect?
1. The LP turbine nozzle assembly
  2. The HP turbine nozzle assembly
  3. The LP turbine exhaust, HP turbine inlet
  4. The LP turbine inlet, HP turbine exhaust
- 1-34. To manually rotate the engine, you should use which of the following tools?
1. 18-inch long 3/4-inch drive extension
  2. 18-inch long 3/4-inch drive socket wrench
  3. 18-inch long 1/2-inch drive extension
  4. 18-inch long 1/2-inch drive socket wrench
- 1-35. Zero reference for the LM2500 compressor is established by the use of which of the following engine components?
1. Vane shrouds
  2. Vane blades
  3. Locking lug blades
  4. Carboloy blade pads

- 1-36. To maintain better control over the rotor speed when jacking the engine, you should use which of the following tools?
1. A torque multiplexer
  2. A torque multiplier
  3. An electric drive motor
  4. An air drive motor
- 1-37. A fifth stage blade platform that is tilted or raised may indicate which of the following failures?
1. Midspan damper
  2. Carboloy pad
  3. Blade root
  4. Tip clang
- 1-38. If you find a "leaner" during a borescope inspection, you should take which of the following actions?
1. Remove the engine from service
  2. Replace the failed part
  3. Operate the engine at low power
  4. Make temporary repairs
- 1-39. Tip curl is usually caused by which of the following malfunctions?
1. Blade rub
  2. Vane rub
  3. Misalignment
  4. Object damage
- 1-40. Tip clang can usually be attributed to which of the following operating conditions?
1. Overloading
  2. Compressor stall
  3. Continuous low-power operation
  4. Continuous high-power operation
- 1-41. When tip clang takes place on a GTE, the major damage occurs to what area of the blade?
1. The midspan
  2. The chord
  3. The root
  4. The tip
- 1-42. When you are inspecting the combustion section of a GTE, what wattage light source should you use?
1. 1,000
  2. 750
  3. 500
  4. 250
- 1-43. The dimples of a dome band that has low operating time will usually have what kind of damage?
1. Burn through
  2. Burn away
  3. Bowing
  4. Cracks
- 1-44. Distortion of the liner assemblies is evident when you observe which of the following conditions?
1. The inner liner bends down, and the outer liner lifts up
  2. The inner liner lifts up, and the outer liner bends down
  3. Stress line streaks
  4. Burn through
- 1-45. What malfunction is the primary cause of DOD to the HP turbine?
1. Broken combustion liner pieces
  2. Loss of film cooling air
  3. Blade cracking
  4. Vane flaking
- 1-46. Fault logic diagrams use all of the following block types to aid in troubleshooting EXCEPT which one?
1. Single-line
  2. Double-line
  3. Highlighted
  4. Shaded
- 1-47. A functional dependency diagram is used for troubleshooting what particular GTE system?
1. The fuel control system
  2. The VSV actuator control system
  3. The electronic power control system
  4. The fire extinguishing control system
- 1-48. As a supervisor, what is your primary concern during a GTE component replacement?
1. Meeting deadlines
  2. The safety of personnel
  3. Proper replacement parts
  4. The availability of tools
- 1-49. To plan an engine changeout, who should be present at the organizational meeting?
1. Department heads only
  2. Security personnel only
  3. Supervisors only
  4. All involved personnel

- 1-50. During a changeout, where should the special support equipment (SSE) containers be placed?
1. Within reach of the crane
  2. Out of the normally traveled area
  3. In the main engine room (MER)
  4. On the main deck of the tender
- 1-51. When should the replacement engine containers be brought to the site?
1. After the old engine has been removed
  2. After supply has inventoried the containers
  3. As the new engine is needed
  4. As soon as possible
- 1-52. The completed MGTE log book should be shipped to the repair activity in what manner?
1. Returned with the technical representative
  2. Returned with the container
  3. Sent by registered mail
  4. Sent by normal mail
- 1-53. When returning containers, you should use what inert gas to pressurize the shipment container?
1. Argon
  2. Halon
  3. Nitrogen
  4. Helium
- 1-54. During the engine changeout, when should crane services be used for other purposes?
1. After placement of the SSE vans
  2. Just prior to engine removal
  3. During meal hours
  4. After completion of the changeout
- 1-55. Improperly aligned horizontal rail flanges may result in damage to which of the following components?
1. Compressor blading
  2. Flexible coupling
  3. C-sump air seal
  4. Aerodynamic coupling
- 1-56. Dry trunnion bearings should be lubricated with which of the following lubricants?
1. 2190 VSI
  2. 23699
  3. WD-40
  4. MLG-G-10924
- 1-57. What form of damage is the greatest threat to gas turbine and support equipment?
1. DOD
  2. FOD
  3. Corrosion
  4. Overheating
- 1-58. When dissimilar metals come in contact with a conductor, which of the following types of metal deterioration takes place?
1. Rust erosion
  2. Etching erosion
  3. Chemical corrosion
  4. Electrochemical corrosion
- 1-59. A reddish-colored oxide usually forms on which of the following metals?
1. Steel
  2. Aluminum
  3. Chromium
  4. Magnesium
- 1-60. A white-gray powdery deposit can usually be found on which of the following metals?
1. Steel
  2. Aluminum
  3. Magnesium
  4. Magnetite
- 1-61. Active corrosion on copper alloys is indicated by which of the following conditions?
1. A verdigris formation
  2. A white-gray powder formation
  3. A gray-green patina formation
  4. A copper-oxide crust formation
- 1-62. Cadmium and zinc coatings provide which of the following types of protection for the base metal?
1. Sealant
  2. Chemical
  3. Electrical
  4. Sacrificial
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- Learning Objective: Identify the procedures for inspecting and maintaining propulsion systems and power train equipment.
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- 1-63. Before opening a main reduction gear (MRG) cover, you should take all EXCEPT which of the following precautions?
1. Drain the LO sump
  2. Post a security watch
  3. Clean the areas around the covers
  4. Obtain the chief engineer's permission
- 1-64. Backlash is best described by which of the following statements?
1. Clearance of the gears that do not mesh
  2. Clearance of the gears operating in parallel
  3. Play between the surfaces of the teeth in mesh
  4. Radial play between the pinion teeth and bearings
- 1-65. When pinion and gear teeth have been slightly indented by foreign material, what action should you take?
1. Closely monitor the damage to see if it spreads
  2. Remove both gears for a complete overhaul
  3. Remove the raised metal on the damaged teeth
  4. Remove the raised metal on both gears
- 1-66. When performing a static check to determine tooth contact, you should use which of the following compounds to coat the gear teeth?
1. An indelible marker
  2. Copper sulfide
  3. Persian blue
  4. Prussian blue
- 1-67. Corrective pitting along the pitch line may occur during which of the following periods of service?
1. During full-power operation
  2. During prolonged operation
  3. During the first few months of operation
  4. During excessive operation at low power
- 1-68. When determining offset alignment readings, manufacturers take into account all EXCEPT which of the following factors?
1. Speed of the installation
  2. Thermal expansion of the MRG
  3. The hydrodynamic oil film effect
  4. Thermal expansion of the foundation
- 1-69. The line shaft (spring) bearing (LSB) used on gas turbine ships is what type of bearing?
1. Prealigned, self-lubricated bearing
  2. Nonaligned, pressure lubricated bearing
  3. Self-aligning, oil-lubricated roller bearing
  4. Self-aligning, oil-lubricated journal bearing
- 1-70. On the LSB, where are the original installation clearance readings located?
1. On the lower bearing housing
  2. On the upper bearing housing
  3. On the base support
  4. On the side cover
- 1-71. How are the stern tube and strut tube bearings cooled?
1. By heat-dissipating fins
  2. By air from the masker air system
  3. By fresh water
  4. By seawater
- 1-72. The temperature-compensated pitch indicating system depends on the thermal stability of which of the following transmitting mediums to sense pitch position?
1. Seawater
  2. Prairie air
  3. Masker air
  4. CRP oil
- 1-73. The electronic pitch position transducer is located in what area?
1. Inside the CRP electronics enclosure
  2. On the right side of the OD box
  3. On the front end of the OD box
  4. Inside the propeller hub
- 1-74. A steady increase in hub servopressure, without a change in system demands, is a good indication that which of the following components is faulty?
1. Auxiliary relief valve
  2. Sequencing valve (closed position)
  3. Reducing valve
  4. Electrohydraulic servo valve

1-75. During the mechanical pitch alignment check, the OD box pitch position plate can be moved (adjusted) a maximum of what distance as long as the distance change can be explained?

1.  $1/32$  inch
2.  $1/16$  inch
3.  $1/8$  inch
4.  $1/4$  inch

